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POSTER SESSION ABSTRACTS
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FumR of *Aspergillus niger* is involved in production of fumonisin and secreted proteins

The sporulation pathway of *Aspergillus niger* represses protein secretion. Colonies of this filamentous fungus secrete proteins throughout the colony except for the sporulating zone. Inactivation of the sporulation gene *flbA* results in colonies that are unable to reproduce asexually and that secrete proteins throughout the mycelium. In addition, the $\Delta flbA$ strain mutant strain shows cell lysis and has thinner cell walls. This pleiotropic phenotype is associated with differential expression of 38 transcription factor genes. Here, one of these regulatory genes, *fumR*, was inactivated. Whole genome expression analysis revealed that 8 out of 63 downregulated genes in $\Delta fumR$ are implicated in amino acid metabolism. In addition, 11 out of 15 genes of the fumonisin biosynthetic gene cluster were strongly downregulated in $\Delta fumR$. This was accompanied by absence of fumonisin production in the deletion strain. When grown dispersed in liquid shaken cultures with xylose as a carbon source, the *fumR* deletion mutant showed reduced protein secretion and a different secretion profile when compared to the wild-type. This phenotype was complemented by adding amino acids to the medium. Taken together, it is concluded that *fumR* is involved in fumonisin production and amino acid production, the latter facilitating protein secretion. As such, *fumR* is an interesting lead for improving *A. niger* as a cell factory.
